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PRODUCTS, PRICES, PARITY: A FAIR EXCHANGE



PRODUCTS, PRICES, PARITY: A FAIR EXCHANGE

Barter agriculture has been out of the scene for generations, but farmers haven't lost their interest in how their crops and livestock products stack up with tractors and plows in the marketplace. Just how many bushels of corn does it take to buy a cultivator?

This comparison is an outgrowth of the complex and detailed series of agricultural prices, indexes, and ratios computed regularly by SRS.

The Farm Bill of 1938 established the program and the information is still needed to administer current farm legislation.

The Index of Prices Received by Farmers provides a measure of the average change in prices of agricultural products from month to month and year to year.

The Parity Index—more formally known as the Index of Prices Paid by Farmers for Commodities and Services, Including Interest, Taxes, and Farm Wage Rates—measures the average change in prices paid for

commodities and services commonly bought by farm families.

The Parity Ratio compares those Indexes and provides an indication of the per unit purchasing power of farm commodities generally in terms of goods and services currently bought by farmers, in relation to the purchasing power of farm products in the 1910-14 base period.

Estimates of prices received by farmers reflect a price, which if multiplied by the total quantity of the commodity sold, would give the total amount received by farmers for that item. That is, the estimates of prices received are for sales of all classes and grades of the product. The primary reason for this inclusive approach is that the price data are chief indicators of total marketings and income to agriculture.

SRS determines average prices received by farmers monthly for about 80 crop and livestock commodities and 80 more on an annual or seasonal basis.

Prices received are collected from various sources, but mostly 4,500 voluntary reporters including farmers and local buyers, such as elevator or livestockyard operators; cooperatives; marketing agencies; produce dealers; processors, canneries, and others with knowledge of product sales. In most cases SRS relies on mailed responses from these sources.

SRS field offices compile summaries of price information for the individual States which are then reviewed by statisticians in Washington, D.C., who set the final U.S. averages and parity prices.

Parity prices for farm products were first defined by the Agricultural Adjustment Act of 1933. Agricultural leaders had recognized that high or low prices for farm products are not in themselves of primary significance. They realized that of far greater importance is what farm products will buy in terms of food, clothing, feed, machinery, fertilizer,

and other things farmers need for living and agricultural production.

Parity prices have come to be the most frequently used parity standard; they are the prices that will give a unit of farm commodity the same purchasing power, or exchange value in terms of goods and services bought by farmers, as farm commodities had in a selected base period (1910-14). In short,

parity prices are a yardstick for measuring how close prices received by farmers are to the price Congress defined as a fair goal.

The parity price formula does not measure cost of production, standard of living, or income parity. It is not a comprehensive measure of the economic well-being of farmers. It is based on price relationships which are only one component of



costs of production and income.

The SRS series relating to prices paid by farmers, from which the Parity Index is developed, is the counterpart of the series on prices received by farmers. As such, the estimates are tied to average prices paid by farmers for a wide variety of items.

The Parity Index, one of the most important indicators of changing economic conditions affecting American agriculture, is actually five separate groups of prices faced by farmers. In terms of farm expenditures, the two most significant groups relate to prices paid for commodities used in farm production and prices paid for items used in family living. These two groups include about 482 prices—everything from feeder livestock, motor supplies, and fencing material to food, household operations, and building products.

Also considered in developing the Parity Index are interest charges tied to farm real estate, taxes on farm acreages, and wage rates for hired labor.

Data for the Parity Index are obtained by mail surveys of merchants asking them prices of products "most commonly sold to farmers." The price information from all sources is processed similarly to that for estimates of prices received by farmers.

The Parity Index was developed to meet the need for a better general measure of changes in prices of goods and services bought by farmers. It has become a symbol for the appraisal of farm well-being as a result of its wide use in determining whether farm products keep in step with prices of commodities bought by farmers.

Although prices and indexes enable comparisons of purchasing power, such as the number of bushels of wheat needed to buy a tractor, they provide only averages and do not indicate situations for individual farmers.

PARITY RATIO PROVISIONS

The often referred to Parity Ratio might be loosely thought of in terms of a batting average for agriculture. But like its sports comparison, it doesn't tell the whole story.

The Parity Ratio is figured by SRS monthly for its report called Agricultural Prices. To determine the Ratio, statisticians divide the Index of Prices Received by Farmers by the Parity Index. Both Indexes, in this case, are on a 1910-14 base as stipulated by law.

Working out the Ratio for a recent month shows a reading of 76 when the Prices Received Index was 462 and the Parity Index was 610.

The Parity Ratio indicates the per unit purchasing power of farm commodities related to those goods and services being bought by farmers, compared with the purchasing power of those farm products for the 1910-14 base period. The Parity Ratio is a measure of price relationships.

There are several things that a Parity Ratio is not. It is not a measure of farm income, farmers' total purchasing power, or of farmers' welfare. These elements depend upon a number of factors such as changes in production efficiency and technology, quantities of farm products sold, and supplementary income from off-farm jobs.

In a move to provide a closer reference point than the 1910-14 base for comparing price relationships, several years ago SRS began providing a ratio based on a 1967 base of 100.

This means that in the month when the Parity Ratio equaled 76, as in the example, another ratio comparing the Index of Prices Received and the Parity Index on a 1967 base was at a level of 102. A ratio over 100 means units of farm products are buying more units of goods and services than in the base.

MORE JINGLE FOR PARTY LINE RING

Crank, dial, or pushbutton, the jingle of the rural telephone is ringing up higher bills for farmers.

The telephone is not alone in the rash of recent upswings in costs encountered by agricultural producers. Overlooking for the moment the more attention-getting production necessities of tractors, fertilizer, and the like, such everyday needs as liquid petroleum gas (LP) and electricity are accompanied by increased costs. Outlays for both moved up smartly in 1974.

The cost of local telephone service for U.S. farmers averaged \$7.16 per month when SRS conducted a survey in the summer of 1974. This annual survey indicated the telephone bill was running 11 percent above the year-earlier figure.

All areas registered price increases for local service. The most sizable gains were notched in the Middle Atlantic States, up 15 percent. The average monthly bill in 1973 in that area had been \$6.16, but last year the toll was \$7.07.

New England and States in the East South Central part of the country had the smallest increases,

8 percent. The bills in New England moved from an average of \$7.25 to \$7.80 and those in the East South Central advanced from \$6.46 to \$7.00.

SRS also noted in its findings that 88 percent of all farms had telephone service, an increase of 1 percent from 1973. The total number of farms with telephones was estimated at 2,488,000, against the 2,471,000 in 1973.

As might be expected, dial phones dominated the market, accounting for approximately 98 percent. And the 1 percent old-style magneto crank model was about matched by the increasingly popular pushbutton version.

The farm electric bill averaged \$28.80 per month during the mid-year survey period, up \$4.60 or 16 percent from the previous year. Farm electricity cost an average of 2.66 cents per kilowatt hour (KWH) last year, compared with 2.31 in 1973.

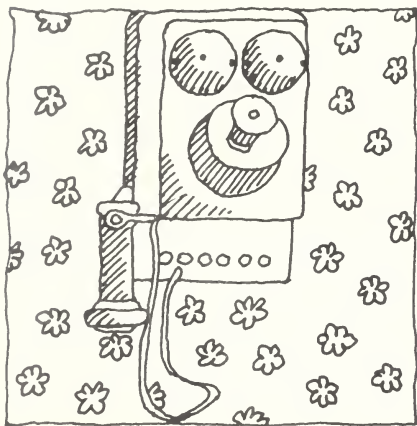
The monthly bill averaged highest in the Pacific States at \$73.50 and lowest in the East South Central with a reading of \$20.20.

Electricity usage on U.S. farms increased 3 percent from a year earlier. Farmers were averaging 1,084 KWH, up from the 1,048 in 1973. California farmers topped all others with a monthly average of 4,600 KWH, followed by Arizona producers with 4,000. On the other end were West Virginians with 580 KWH.

LP gas charges took a most noticeable spurt upward in 1974 with a jump of 79 percent. The average price per gallon, the most common sales category, went from 16.9 cents in 1973 to a new high of 30.2 cents.

Over 53 percent of the farms—1.5 million—were using LP gas in 1974, a slight expansion from the year earlier.

In the survey, SRS asked farmers to report cost information from their most recent bills, usually early summer or late spring.





THE TRANSPORTATION TANGLE

The next 5 years are expected to see a substantial growth in the shipment of agricultural commodities—and how efficiently these transportation needs will be met depends largely on the health of the Nation's railroads.

John W. Snow, Deputy Assistant

Secretary of the Department of Transportation (DOT), indicated at USDA's 1975 National Agricultural Outlook Conference that 1980 shipments of most farm commodities are likely to range between 20 and 100 percent higher than their 1971 levels.

According to Snow, the trucking industry, in general, and barges which handle relatively specialized shipments can be expected to meet their share of this enlarged demand. He noted, however, that their rates may increase faster than in the past because of higher fuel prices.

The problem area will continue to be the Nation's rail system—which is the backbone of the agricultural transportation network.

In his speech at the Outlook Conference, Snow acknowledged that the rail industry is currently in a deteriorating situation. He stated that the rail industry as a whole is very weak financially, and physically its capacity to haul increasing traffic and to prevent further declines in service quality is in doubt, given continuation of the status quo.

However, DOT officials are implementing a number of policies to change the status quo. Snow indicates one area that offers vast opportunities for both improving the railroads' position and providing better service to agricultural shippers would be the formation of a new intermodal truck-rail freight system.

The concept of a truck-rail system is not new. In fact, the well-known "piggyback" system has been around for over a decade. But DOT officials consider piggyback traffic largely a make-do, improvised arrangement.

According to Snow, most trailer-on-flatcar (TOFC) and container-on-flatcar (COFC) traffic is mixed with carload traffic in conventional trains. This means that the TOFC traffic is subject to the same yard and road delays that plague carload traffic. Furthermore, the present

TOFC terminals don't have adequate handling equipment or storage area that permits fast, low-cost handling. Most are also poorly located with little highway access.

On the highway side, truckers too often regard TOFC as merely a handy cost cutter for dealing with short-term traffic peaks, or with equipment or driver imbalance. The result is that potential users say they are bothered by poor reliability, frequency, and transit time with most piggyback service available today.

What DOT officials would like to see emerge over the next few years is a nationally coordinated, fully integrated rail-truck system that would merge the best aspects of all-rail and all-truck systems to the benefit of shippers, railroads, and truckers.

Transportation researchers have worked out models of such a system which would consist of specially adapted, low-weight, low-cost, fast-moving locomotives and cars which would be serviced with their own special terminal facilities.

A feasibility study suggests that such an advanced TOFC/COFC service could generate seven times as much intermodal traffic as the existing piggyback service has generated in the past 10 years. The market for an advanced, network-type truck/rail service could go as high as 30 million trailers, which would bring in about \$4 billion in total revenues.

Welcome as the added revenues would be to the transportation industry, the real beneficiaries of an advanced intermodal system would be the shippers of farm products—who would finally have access to the kind of low-cost, high-quality system they've long needed.

WHEY OF THE FUTURE

Presently, a nearly useless but major byproduct of cheesemaking is whey; the ratio averages about 9 pounds of whey to a pound of cheese.

But Agricultural Research Service scientists at Utah State University are on the path toward turning whey into a feed ingredient for dairy herds. Tests showed 100 pounds of whey to be equal in nutrition to 7 pounds of corn or barley.

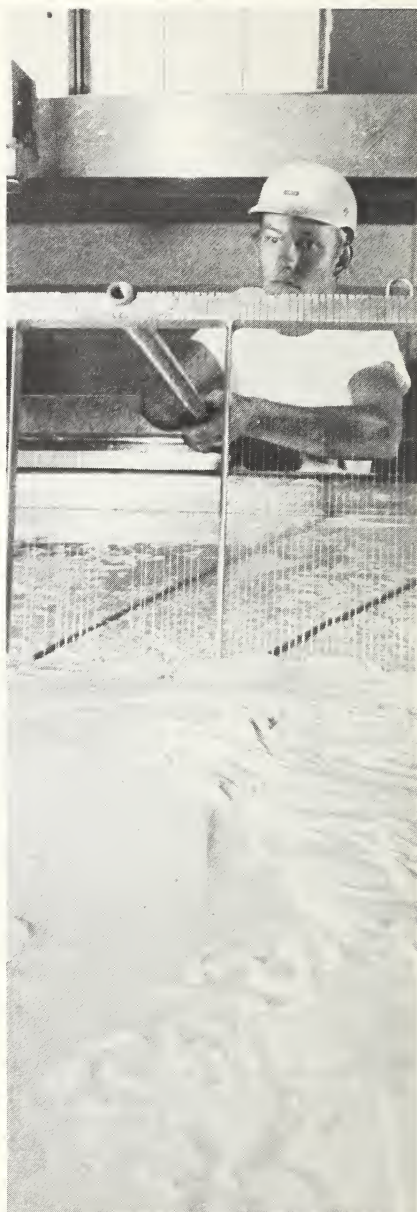
In another study, 16 Holstein cows were fed fresh whey in mixed amounts with water, hay, and grain. Whey substituted for 13 pounds of hay per cow daily.

Indications were that cows consuming larger quantities of whey tended to put on more weight than those eating less. Significant for dairymen were the facts that there was no apparent effect on milk production or on milk fat, protein, or solids-not-fat content.

Work with 5- to 7-month-old heifers found that those fed whey but no grain showed a growth rate equal to those getting 5 pounds of grain and no whey daily. More importantly, heifers that consumed both grain and whey had the overall best growth rate.

Researchers pointed out some economics of the whey-dairy feed situation. First, liquid whey carries a large disposal problem for cheesemakers; consequently, it may be inexpensive or possibly free for the hauling to dairymen in some instances.

Second, if the liquid whey can be bought for under 15 cents per 100 pounds, and the farmer lives within 25 miles of the plant, it would be a profitable alternative to some other feeds at current grain prices.



In cheesemaking, cutting the curdled milk allows separation of the curd and whey. The curd then settles to the bottom of this 30,000-pound tank. Only 3,000 pounds will become cheese, the rest is whey.



ARS researcher reviews the feeding schedules of Holstein cows in the experimental station at the Utah State

University Dairy Farm. Checks compared feed and whey consumption with milk production and body weight.



To get animals to drink whey regularly, scientists restricted them from water 8 to 12 hours per day at the start. Once the dairy animals got use to the whey, no

water restriction was needed. Cattle readily drank fresh and 1-day-old whey, but stayed away from older whey because of increasing acidity.

SURVEYSCOPE

To give our readers a clearer picture of the vast scope of SRS activities, Agricultural Situation presents a series of articles on special surveys undertaken in various States. While these are not national surveys, they are important to the agriculture in individual States.

It may seem odd to think of Texans as concerned about shortages, but the fuel and fertilizer limitations of 1974 generated some questions that needed quick answering.

Sure Texas is a giant producer of fuel, but how big is its appetite, especially in agriculture?

The Texas Department of Agriculture wanted to know the State's fuel and fertilizer needs and storage capabilities. The goal was to identify patterns and quantities of energy used in farming and ranching, and possibly point out some areas for conservation.

Charles Caudill, Statistician in Charge of the Texas Crop and Livestock Reporting Service and his staff undertook the special Texas Farm Fuel and Fertilizer Survey in the summer of 1974. It was the first study of its kind and involved personal interviews with 1,500 ranch and farm operators.

They identified usages of gasoline, liquid petroleum gas (LP), diesel fuel, natural gas, and electricity; and the farm storage capacities for the first three.

Also estimated were energy purchases for crop, livestock, or poultry production, custom services for



Agriculture is a giant industry in Texas and a big energy user . . .

others, and home use.

As an example, take a look at LP gas. Of the 209,000 Texas farms, 131,000 bought 289 million gallons of LP from July 1973 through June 1974. The average was 2,200 gallons.

About 41 percent of the LP went for crop production, mainly to pump irrigation water and dry grain. Heating and other nonfarm activities took almost 36 percent; livestock and poultry production required approximately 22 percent. The rest was used in custom services.

Farm LP storage facilities had a capacity for 69 million gallons.

The survey found that 88 percent of all Texas farms used electricity and at an annual rate of 18,000 kilowatt hours per farm.

Natural gas was used on 16 percent of the farms; 93 percent went for crops, also primarily for irrigation.

Gasoline was used mostly for pickups, autos, and older farm tractors, while diesel fuel was used mostly in late model medium and

large tractors.

Caudill's statisticians determined that total energy Btu's purchased by farmers and ranchers broke down along these lines: natural gas 54 percent; gasoline 17 percent; diesel fuel 14 percent; LP 10 percent; electricity 4 percent; and less than 1 percent in fuel oil.

The three major crops in Texas, sorghum, wheat, and cotton occupied some 19 million acres. Almost 6 million of these are irrigated acres which helps explain the heavy use of energy in pumping water. Fertilizer applications for these three crops covered 12.6 million acres.

In total, nearly 61 million acres were in crops or improved pasture for the survey period and almost 26 million were fertilized. The estimates showed that farmers applied 2.5 million tons of total fertilizer material, which contained 806,000 tons of nitrogen, 319,000 of phosphate, and 104,000 of potash.



... which prompted the important farm fuel and fertilizer survey in 1974.

Briefings

RECENT REPORTS BY USDA OF ECONOMIC, MARKETING, AND RESEARCH DEVELOPMENTS AFFECTING FARMERS.

WORLD FERTILIZER SUPPLY The taut condition between world fertilizer supply and demand may hold through 1975 and into 1976, with prices still climbing, but not with '74's acceleration. USDA economists add that the current high prices are bolstering production prospects which may even signal a surplus situation by decade's end, despite a forecast sizable gain in fertilizer use by then.

NITROGEN, PHOSPHATE, POTASH Here's how the world fertilizer supply stacks up: Nitrogen is the most widely used and its small stockpile is not likely to expand in the next 2 years. Phosphate should be more plentiful than nitrogen in 1975 and '76, provided no problems hit the phosphate rock supply. Potash could also be more available this year and next, if idle capacity in Canada, the major producer, can be developed quickly.

U.S. FERTILIZER SITUATION U.S. farmers may pay 10 to 15% more per ton for fertilizer during the 1975 planting season than they did in the last months of 1974, economists forecast. This size increase would certainly not match the doubling in prices that followed the removal of price controls in late 1973.

PRESSURE ON PESTICIDES Pesticide demand is expected to move up again in 1975—it's been rising about 7% annually since 1966—with continued tight supplies of some products and further price gains. Some inventories are low, especially herbicides.

NEW YEARBOOK "Shopper's Guide," the latest USDA yearbook seems meant for the times with its goal of helping the shopper buy the right product for the best price. The 368-page illustrated hardback carries six sections devoted to food, materials, equipment, gardening, services, and recreation. "Shopper's Guide" shows ways to combine

foods for a desirable diet, compare costs of fresh, frozen, and canned, and understand foods, nutrition labeling, food grades, and unit pricing. A copy of "Shopper's Guide" may be purchased for \$5.70 at Government bookstores or by sending a check or money order to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. No copies available from USDA.

NO SLACK SEEN IN FARMING COSTS USDA economists point out that farmers will likely encounter still higher prices for agricultural production items this year. The availability of inputs for 1975 can best be described as tight. This constriction on goods will squeeze up prices further . . . they've been advancing steadily for production items as a group since about 1970.

GAS GUESS Most energy supplies will match demand in 1975, but the price tag will be significantly higher, assuming there's no softening of the international oil situation. Experts do say supply prospects for fertilizer and LPG maybe clouded in '75 by a shortage of natural gas.

SHIPPING SPUDS A major problem facing potato people is costly quality deterioration in spuds during marketing, mainly in shipping. A USDA experimental operation cut damage and grade losses to zero when potatoes were shipped in corrugated boxes and polybags. The new system was cheaper, easier, and quicker than current conventional methods.

STOPPING STOCK POND SEEPAGE USDA scientists, looking for a way to stifle stock pond seepage, have come up with a chemical treatment for high-calcium soils. The simple and economical process uses sodium carbonate, or soda ash, scattered over the empty pond bottom by hand and worked in with a small tractor. The seal can hold for 2 years and if leaks do develop chemicals spread on the water surface will seek out the drainage spot.

TOBACCO OUTLOOK FAVORABLE Strong demand for U.S. tobacco indicates a good year for that industry. USDA economists say cigarette consumption may advance from the 1974 record level, also U.S. leaf exports are expected to hold near recent high marks. Despite a

big crop in 1974, another cut in carryover is anticipated by the marketing year's end. For this year, growers are likely to harvest more tobacco, pushing up cash receipts, but rising production costs will limit the net.

OPPOSITE OUTLOOK FOR COTTON Mill consumption is forecast to be off one-fifth and exports down one-third in 1974/75. The cotton industry is being hard hit by declining economic activity across the board and especially in the textile business. Demand for all fibers, here and overseas, is stumbling.

PROCESSING VEGETABLE PROGRESS The 13 vegetables grown commercially for processing showed a 10% boost in output in 1974 and harvested out at 12.5 million tons. More acreage and better yields prompted the expansion. The output gain coupled with 48% higher raw product prices pushed total value of raw products at packing-house doors to over \$1.027 million, 63% more than in 1973.

WOOL PRICES The incentive price of 72 cents a pound for marketings of shorn wool and a support price of 80.2 cents a pound for mohair will continue unchanged in 1975, in accordance with the National Wool Act. Existing market conditions indicate that payments may be needed on 1974 marketings of shorn wool, while mohair prices are already above the support level.

NEW HIGH SEEN FOR FARM EXPORTS Shipments of U.S. farm products abroad may be worth \$22 billion in the year ending June 30, topping the \$21.3 billion export record set a year earlier. Behind the new level are higher prices for most commodities, offsetting an expected one-fifth drop in tonnage.

FARM NUMBERS STABLE The number of farms in the U.S. during 1974 was 2,830,000, only slightly fewer than the year earlier total of 2,844,000. SRS's preliminary estimate for 1975 is 2,819,000. Total land in farms changed little, off less than 1 percent in 1974 to 1,088 million acres. Another similar size decline is expected this year.

FARM SIZE EXPANDS SLIGHTLY The average size of farms continues to grow, but at a smaller rate than during the past decade. The 1974 average of 384 acres was 1 acre larger than in 1973 and 52 more than 10 years earlier. Another 1 acre increase is expected for this year.

Statistical Barometer

Item	1972	1973	Latest available data	
Farm Income:				
Volume of farm marketings (1967=100)	113	116	117	2
Cash receipts from farm marketings (\$bil.)	61.0	88.6	94.5	2
Realized gross farm income (\$bil.)	69.9	97.0	102.1	2
Production expenses (\$bil.)	52.4	64.7	76.5	2
Realized net farm income (\$bil.)	17.5	32.2	25.6	2
Income and Spending:				
Disposable personal income (\$bil.)	802.5	903.7	990.8	2
Expenditures for food (\$bil.)	123.4	143.6	157.5	2
Share of income spent for food (percent)	15.4	15.9	16.9	2
Prices:				
Consumer price index, all items (1967=100)	125	133	154	November 1974
Food (1967=100)	124	141	168	November 1974
Farm Food Market Basket:³				
Retail cost (1967=100)	121	142	166	November 1974
Farm value (1967=100)	125	167	172	November 1974
Farmer's share of retail cost (percent)	40	46	40	November 1974
Agricultural Trade:				
Agricultural exports (\$bil.)	9.4	17.7	2.4	November 1974
Agricultural imports (\$bil.)	6.5	8.4	.8	November 1974
Farm Production and Efficiency:				
Farm inputs, Total (1967=100)	102	106	105	November 1974
Farm output per unit of input (1967=100)	110	106	103	November 1974
Farm output, total (1967=100)	110	112	109	November 1974
Livestock (1967=100)	108	105	109	November 1974
Crops (1967=100)	113	119	110	1974
Feed grains (1967=100)	112	115	92	1974
Hay and forage (1967=100)	105	110	104	1974
Food grains (1967=100)	102	112	120	1974
Sugar (1967=100)	128	112	107	1974
Cotton (1967=100)	187	174	157	1974
Tobacco (1967=100)	88	89	100	1974
Oil crops (1967=100)	131	155	129	1974
Cropland used for crops (1967=100)	98	104	106	November 1974
Crop production per acre (1967=100)	115	114	104	November 1974

¹Preliminary.

²Annual rate, seasonally adjusted, third quarter, 1974.

³Average annual quantities per family and single person households bought by wage and clerical workers, 1960-61, based on Bureau of Labor Statistics figures.

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